



UNITED STATES PATENT AND TRADEMARK OFFICE

SP
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,806	09/08/2003	Hisakazu Okajima	815_011	1123
25191	7590	03/01/2005	EXAMINER	
BURR & BROWN PO BOX 7068 SYRACUSE, NY 13261-7068				PAIK, SANG YEOP
ART UNIT		PAPER NUMBER		
		3742		

DATE MAILED: 03/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/657,806	OKAJIMA, HISAKAZU	
	Examiner	Art Unit	
	Sang Y Paik	3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 16 December 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-3 and 5-20 is/are rejected.
- 7) Claim(s) 4 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____.

- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 15, 16, 17, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Kano et al (US 6,242,719).

Kano shows a heater having a ceramic plate made of aluminum nitride with a resistant heater element formed in the ceramic plate, the heater element forming a continuous wiring pattern with a plurality of flexures, and the wiring pattern further includes the flexures having a swollen part in an asymptotic direction as the wiring pattern passes the terminals (see Figure 1(a) where the swollen portions are the portions that are protruding toward the terminal).

3. Claims 1, 2, 5 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Hurko (US 3,067,315).

Hurko shows a heater having a ceramic plate with a resistant heater element formed therein with the heater element having a continuous wiring pattern with a plurality of flexures with a distance between the radially adjacent wiring pattern in a first region is made constant and the distance between the radially adjacent wiring pattern in a second region is made greater than

in the first region where distance is gradually becoming wider from the first region to maintain the thermal uniformity.

4. Claims 1 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Fure et al (US 6,753,507).

Fure shows a ceramic heater with at one hole formed therein, a resistance heater element having a continuous wiring pattern including a plurality of flexures and a plurality of curved portions having a radius of curvature that sequentially increases as the respective distance between the curved portion and the hole increases (see Figure 3) to maintain the thermal uniformity.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 3, 5, 8-11, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fure et al (US 6,753,507) in view of Mizuno et al (US 5,766,363).

Fure shows the heater structure claimed the plate made of aluminum nitride ceramics, a heater element having a continuous wiring pattern with a plurality of radially adjacent folding flexure parts. Fure further shows that plate includes holes wherein as the wiring pattern passes by the hole, the wiring pattern forms the radius curvature that sequentially increases as the respective distance between the curved portion and the hole increases (see Figure 3). However,

Fure does not show the adjacent wirings having the claimed larger second distance between the radially adjacent wirings in the second region.

Mizuno shows a heating pattern including a plurality of flexures with a folding part where the distance between the radially adjacent wirings gradually becomes wider in the second region than in the first region where the distance remains substantially constant. Mizuno further shows that the folding parts include a substantially linear connecting part between its corners. In view of Mizuno, it would have been obvious to one of ordinary skill in the art to adapt Fure with the claimed second distance between the radially adjacent wirings in the second region to further provide a uniform heating distribution along the heating surface.

7. Claims 6, 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fure in view of Mizuno as applied to claims 2, 3, 5, 8-11, 13 and 14 above, and further in view of Yoshida et al (US 6,080,970).

Fure in view of Mizuno shows the heater structure claimed except providing the terminals in the center of the plate.

Yoshida shows a ceramic heater where the terminals of the heating element in the center of the plate, and Yoshida further shows that the heater element embedded in the ceramic plate. In view of Yoshida, it would have been obvious to one of ordinary skill in the art to adapt Fure, as modified by Mizuno, with the terminals provided in the center of the plate as an alternative arrangement to more conveniently provide the electrical terminal connections, and further adapt with embedded heater element in the aluminum nitride ceramic plate that can also provide a uniform heating distribution that can withstand a high temperature and corrosion.

Art Unit: 3742

8. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kano et al (US 6,242,719) in view of Yoshida et al (US 6,080,970).

Kano shows the heater structure claimed except the heater element being embedded in the ceramic plate.

Yoshida shows a ceramic heater with a heating element embedded therein. In view of Yoshida, it would have been obvious to one of ordinary skill in the art to adapt Kano with the heating element embedded in the ceramic plate as an alternative arrangement that can also provide a good uniform heat distribution as well as to further protect the heating element from corrosion.

Allowable Subject Matter

9. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

10. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

With respect to Kano, the applicant argues that Kano fails to shows claimed recitation for the continuous wiring pattern having the plurality of flexures to provide the uniform thermal pattern. As is clearly shown in Kano, the continuous wiring pattern with a plurality of flexures is shown indicated by the folded portions of the heating element. Such structure or arrangement meeting all the recited elements would provide the thermally uniform area between the radially adjacent flexures as claimed by the applicant. With respect to claim 15, the swollen parts are

clearly shown by the protruding portions of the heating wire near the terminal ends where the protruding portions in the asymptotic direction with each other so as to narrow the gap between the adjacent fixtures. Thus the applicant's arguments are not deemed persuasive.

With respect to Hurko, the applicant argues that there is no showing of the radially adjacent, sequential wirings. This is not deemed persuasive since there are clearly two set of sequentially adjacent folding portions wherein the claimed distance of larger gap or distance is shown. One of the folding portion is in near the center of the plate and another one in the peripheral region of the plate.

Thus, the applicant's arguments are not deemed persuasive and also made moot with respect to the new ground of rejections necessitated by the amendment.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Y Paik whose telephone number is 571-272-4783. The examiner can normally be reached on M-F (9:00-4:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sang Y Paik
Primary Examiner
Art Unit 3742

S. R.

syp